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City of Lake Worth Aquatic Facility Survey and Report

Re: Repairs, Upgrades and Improvements
Report Prepared by Bob McCallister, Aquatic Consultant
December 2016

Scope of Service

Aquatic Consultant surveyed and inspected the Outdoor Pool and accompanying facilities. The Aquatic Consultant prepared the following comprehensive report with recommendations for repairs, upgrades and facility improvements. Recommendations have been included in this report for the City of Lake Worth to have the opportunity to choose the level of repairs and improvements based on budget constraints.

The Aquatic Consultant has thoroughly researched cost estimates for all components contained within the report including materials, equipment and labor. The report is divided into 2 categories: 1) Pool/Filtration System and 2) Buildings, Structures and Grounds. The estimated pricing is included in this report for the purposes of development of a project budget and an RFP for the work.

Additionally, the Aquatic Consultant provided an updated business plan and budget including operational cost and revenue projections based on the improvements to the Aquatic Facility.

Finally, there is an Executive Summary provided at the end of this report excluding the technical and financial information within this report for a quick overview.

Pool and Filtration System

Pool and Wading Pool

The pool is a 50-meter by 25-yard competitive swimming pool with a 1-meter diving board and diving well. The pool is 3.5 ft. at each end and tapers down toward the center to a 12 feet depth. The 50-meter pool holds approximately 750,000 gallons of water. The wading pool is 16 ft. by 40 ft. and contains approximately 8,000 gallons of water. Both pools have a marcite (plaster) type finish that was coated over an epoxy paint type finish and as a result is delaminating in several areas. Lane markers and pool trim are ceramic tile.



There are 4 main drains in the 50-meter pool which do not work as marcite material was left in the main drains during the installation and never removed. Federal Law regulates the main drains in public pools. The Virginia Graeme Baker Act (VGB) was passed in 2008 mandating that all public swimming pools have a main drain per the requirements outlined in the VGB Act. Currently, both pool main drains are not compliant nor do they provide for the proper drain flow for pool circulation.

The 50-meter pool has a stress fracture in the perimeter gutter primarily on the east side of the pool. The pool had a major leak on the northeast corner of the pool under the pool deck that was losing several thousand gallons of water daily until it was discovered and repaired this past summer. This water leak continued for several years causing the original concrete deck to be undermined and settle. This scenario may have caused the fractures in the gutter, but mostly caused the original deck to crack. The original deck has been covered with sand based pavers that are covering the settling deck. The pool deck drains on the east side do not function and appear to be clogged by sand or other materials.

The Wading Pool has an underground leak in the main drain line outside the fenced area leading back to the filter room and is showing up as sand and water entering into the filter room on the northeast wall where the main drain line returns into the filter system.

Pool and Wading Pool Needs

Cost Estimate

• Main drain sump boxes and 4" drain lines clearing and compliance to VGB	\$ 10,000
• Remove failing marcite coating and epoxy paint from both pools and re-marcite	\$ 150,000
• Discover and repair leak in main drain line in the wading pool and repair.	\$ 5,000
• Replace all lane line and trim ceramic tiles in both pools	\$ 12,000
• Cut channels in stress fractures fill with hydraulic cement and finish with marcite	\$ 3,000
• Pull up deck pavers every 5' along the perimeter of the northeast sides of the 50-meter pool for the length of both 25-yard and 50-meter and sound check on original deck for voids from pool leak erosion. Discover voids and back fill voids and replace pavers as needed to finish.	Allowance \$ 20,000
	Sub-Total \$ 200,000

Pool and Wading Pool Optional Improvements

Convert the 50-meter pool to a zero depth entry on south end; convert 12' deep main drains to a 4.5' depth; convert pool return lines to assure pool water circulation per national swimming pool standards; includes refinish of marcite and tile work. Remove starting blocks on south end and diving board standards.

Budget \$ 500,000



<p>Install water interactive spray features (8 above pool water surface and 12 floor geyser type) in shallow end down to 1.5' depth. Install 4-sets of 8 deck sprays along east and west sides of the shallow end of pool from 1.5' depth to 4' depth. Install 4 – 8' in-pool benches on east and west sides of shallow end from 2.5' to 4' depths. Includes spray feature supply drains and spray feature pump, manifold and transport water lines.</p>	<p>Budget \$ 350,000</p>
<p>Install 2 – 150' waterslides off of 1 – 25' tower to exit into shallow end of pool in 4' to 4.5' water. Includes slides supply drains and slide pumps and transport water lines.</p>	<p>Budget \$ 350,000</p>
<p>Demolish Wading Pool, bench and shade structure. Build "Tiki Hut" type bar, shade structures with tables and Chairs; design and structures to be within the 44' x 60' footprint of the wading pool area.</p>	<p>Budget \$ 75,000</p>
<p>Remove existing 10' x 50' shade structure on the south end of the pool and replace with "Sail" shade type structures.</p>	<p>Budget <u>\$ 35,000</u></p>
<p>Improvements Sub-Total</p>	<p>\$1,310,000</p>

Buildings, Structures and Grounds

Bathroom and Offices

The existing bathhouse and offices were built in 1971. There have been several renovations to the building over the years including restrooms added to the south end of the building for public beach patrons. The footprint of the building is approximately 185' x 24'. There are many current issues including: roof structure failing; rusting of metal fixtures, toilet wooden partitions; poor lighting, exposed electrical conduits; inadequate showers and no handicapped showers; inadequate staff space for offices; and un-inviting and inconvenient front entrance.

The facility's footprint is a total of approximately 35,000 sq. ft. The pool is 13,800 sq. ft.; pool/pool deck and wading pool footprint is 29,226 sq. ft. The current bathhouse is 4,810 sq. ft.

Staff reports that the bathhouse was condemned due to the roof issues a couple years ago.

It is the recommendation of the Aquatic Consultant that this building be demolished and a new structure be rebuilt outside of the south side pool and deck footprint. In addition, the new building would be a two-story structure with the bathhouse entrance, bathrooms/showers, lifeguard room, pool storage and pool manager office located on the first floor level. The second floor would house staff offices, a patio pavilion for public use and/or private rentals and a concession stand. On the east end of the first level, a separate public restroom apart from the pool operations would be built to service the beach patrons as the original building provides. A half basement on the west side of the bathhouse



would house a garage for beach lifeguard equipment, a beach lifeguard room, bathroom and exercise room. The basement would also house the new filter room as described in sections below.

The building would be approximately 140' x 30', with 10,500 sq. ft. of total usable space.

In addition, the footprint of the existing building would become additional pool deck space with shade structures, deck furniture, and a 155' – 2' wall with a plexi-glass type windshield. This area would provide beach and ocean views as well as a public view of the new aquatic facility from the beach and drive.

Calculation:	Building 10,500 sq. ft. x \$185/sq. ft.	\$ 1,942,500
	Piling type foundation allowance (required)	\$ 200,000
	Elevator at Park Lot level to 3 rd floor	\$ 25,000
	Demolition allowance for bathhouse and filter room	\$ 100,000
	Additional pool decking 2,880 sq. ft. allowance	\$ 40,000
	185' - 2' Wall and 6' plexi-glass wind shield allowance	\$ 20,000
	Budget	\$ 2,322,500

Filter Room

The existing filter room is in worse condition than the bathhouse. The roof structure is failing and currently being supported with 2' x 4's and plywood. The pumps, piping, valves, gauges are in poor condition and are in questionable condition as to meeting proper filtration standards. The pool heaters are scheduled to be replaced for the coming winter season. The electrical components, including VFDs and electrical panels providing pump motors and control, are corroding and in poor condition and/or not working.

It is the recommendation of the Aquatic Consultant that this building and equipment be demolished and rebuilt and equipped.

Equipment Budget	\$250,000
Filter Building Budget	<u>\$ 50,000*</u>
Total	\$300,000

*Note: Building Budget to be subtracted if new bathhouse plan is selected.

Summary Review of Options and Resulting Projected Attendance and Revenue

Option 1. Pool and Wading Pool Needs -	Budget	\$ 200,000
Bathhouse and Offices	Budget	\$2,322,500
Filter Room	Equipment Budget	<u>\$ 250,000</u>
	Total	\$2,772,500

Option 2. Conversion of 50-meter pool to zero depth entry on south end.

Option 1 Budget	\$2,772,500
Conversion Budget	<u>\$ 500,000</u>
Total	\$3,272,500**

**Note: If Option 2 is chosen, then Options 3 & 4 should be strongly considered as pool piping for these options should be installed below the deck and pool shell before the conversion of the 50-meter pool to



a zero depth pool. Also, the new filter room will need to be designed to receive the spray features and waterslide pumps, piping and controller equipment.

Option 3. Install water interactive spray features

Option 2 Budget	\$ 3,272,500
Spray Features Budget	<u>\$ 350,000</u>
Total	\$ 3,622,500

Option 4. Install 2 – 150’ waterslides off of 1 – 25’ tower

Option 3 Budget	\$3,622,500
Waterslides Budget	<u>\$ 350,000</u>
Total	\$3,972,500

Option 5. “Tiki Hut” type bar and patio

Option 4 Budget	\$3,972,500
Tiki Hut Budget	<u>\$ 75,000</u>
Total	\$4,047,500

Option 6. “Sail” shade type structures

Option 5 Budget	\$4,047,500
Sail Shade Budget	<u>\$ 35,000</u>
Total	\$4,082,500***

***Note: If the City decides to proceed with this project, there should be a budget line item for FF&E of \$100,000. This will allow for purchasing of deck furniture, office furniture and computers for POS and management tracking of revenue, concession stand equipment and possibly a security camera system. In addition to the FF&E, it is recommended to add a contingency of 5% or \$215,000; and another 5% or \$215,000 for architectural services.

Total All Inclusive Construction Budget \$4,612,500

Projected Revenue and Operational Cost

Option 1.

The Pool operations currently cost approximately \$300,000 annually. The total annual revenue is \$66,000 from approximately 10,000 annual users, plus \$33,000 from swim team rentals. The pool is currently open 29 hours a week with lifeguard supervision. The pool rentals for swim teams are not staffed with City staff lifeguards.

With the repairs to the pools and replacement of the bathhouse and filter room, the only difference is would be providing a much better view of the pool from the beach and from the pool to the beach. This alone would give a good potential for increased usage of the facilities for rental functions and drawing swim patrons to the pool.

Option 1’s minimal and necessary improvements could potentially increase individual and family patronage by 25%. The average revenue per current patron calculates to \$6.60 per user. The 25% increase in patronage to 12,500 could bring the revenue to \$82,500.



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The operational cost could remain at the current \$300,000 annual cost. However, if the demand for increased operation hours comes about by the simple marketing of the facilities being visible, new and attractive, the City may consider increasing operational hours. This would cause a need for additional staff and operational cost. Therefore, this option has the minimum potential of recovering \$116,500 of a \$300,000 cost of operations or 38% over the now 33%.

Option 2.

Conversion of the 50-meter pool to a zero depth entry and shallow water pool throughout will be more family friendly and attendance would increase substantially. However, this conversion would not reach the maximum potential for revenue and attendance without the water slides and spray features.

The Aquatic Consultant does not recommend that Option 2 stand-alone as the national and international trend in aquatic facilities is for water parks and spray features. These water park type facilities are mostly self-supporting facilities and would prove to be the case with the City of Lake Worth's new aquatic facility.

Options 2, 3 & 4

Combining these three options would give the City an attractive and exciting family oriented aquatic facility that would become a destination venue for the community and visitors. With this type of aquatic facility, the public demand for more operational hours is highly likely and therefore an increase in the operations budget would be necessary.

The family water park type facility would require additional staffing including: lifeguards, attendant staff for cashier operations and concession operations. In addition, the new high technical filters, controllers and water feature pump motors would need to be maintained 7 days a week. The facility would need thorough cleaning daily and continually during operational hours.

Financially, choosing Options 2-4 would require an annual operational budget of \$476,651 with revenue is projected at \$453,000, leaving an annual City subsidy of \$23,651. (See pages 7 & 8)

Options 5 & 6

Adding Options 5 & 6 to Options 2, 3 & 4 would enhance the attendance and revenue potential. It would most likely allow the new aquatic facility to break even and/or become 100% self-supporting.

Financially, the revenue potential is projected over the \$476,651 operational cost, thus self-supporting.

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**City of Lake Worth Aquatic Facility
Estimated Operations Budget**

Options 2-4

Operations Outline

Facility open Tuesday – Sunday year round Average 8 hours per day; Average 6 lifeguards; 1-2 attendants; 1 – PT Supervisor. ; 1- PT Asst. Supervisor; 1 – Admin. Asst. (40hrs.); 1 – Facility Mgr. (40hrs,); 1 – Pool Operator (40hrs.)

Expenditures:

Staffing – Full Time

1 Facility Program Mgr. (currently on staff)	35,000	
1 Admin. Asst. (Cashier/Receptionist)	26,250	
1 Pool Operator/ Mt. Worker	32,500	
Benefits & FICA (27%)	<u>34,675</u>	
Subtotal full time staff		128,425

Part Time Staff

2 PT Supv. @ 1400 hrs. ea, (\$12/hr.)	33,600	
2 PT Asst. Supv. @ 1400 hrs. ea. (\$11/hr.)	30,800	
24 PT Lifeguards @ 5-29 hr./wk. (9.50/hr.)	150,000	
4 Attendants @ 5-29 hr./wk. \$8.50/hr.	12,000	
Conc. Workers (Contract Concession)	na	
FICA (6%)	<u>14,451</u>	
Subtotal part time staff		240,851

Operation Supplies

Office Supplies	500	
Computer Supplies	375	
Janitorial Supplies	2500	
Recreational Supplies	6,000	
Program Materials and Supplies	1,500	
Uniforms	4,000	
Safety Supplies	1,000	
Chemicals (corrected over budgeted 1st draft)	25,000	
Accountable Equipment	3,000	
General Printing	750	
Repairs/Maintenance (Outside Warranty)	<u>11,250</u>	
Subtotal operation supplies		55,875



Utilities

Communications (phone, Internet, security)	3,000	
Electric	30,000	
Gas	12,500	
Water/Sewer	<u>6,000</u>	
Subtotal Utilities		<u>51,500</u>
Total Expenditure Budget		\$476,651

City of Lake Worth Aquatic Facility

Estimated Operations Budget

Options 2-4 Revenue Projections

Revenue increase is based upon an average 150 patrons for 300 good weather days @ average of \$6.60 Note: During Private Rentals and Swim Team Rentals require off-duty City lifeguards that are to be paid by the rental group at \$15/hr./lifeguard

Admission Fees	(45,000 patrons)	297,000
Facility Rental Fees	(50 rental @ \$500)	25,000
Swim Team Rental	(25 yard lanes only)	66,000
Instructional Classes	(Swim/Exercise Classes)	50,000
Concessions/Resale	(15% of Gross Sales)	<u>15,000</u>
	Total Revenue	453,000

Revenue:

General Admission	Fee Levels Adult \$7.50 & Youth/Sr. \$5
Swim Team Lane Rental	\$10.00/25 yard lane/hr.
Recreational Pool Rental	\$500/2 hrs.

Expenditure Budget	\$476,651
Revenue Budget	<u>\$453,000</u>
City Annual Subsidy	\$ 23,651****

****Note: The addition to the facilities with Options 5 & 6 may increase rentals and concession revenue to exceed the City Subsidy to become a break-even budget or generate revenues above expenditures.

Budget and Marketing Note

Currently, Lake Worth City Beach has an annual attendance of 700,000. The Budget revenue projections are very conservative in this report. With the opening up of the beach view from the Water Park and view of the Water Park from the beach, the attendance to the Water Park will increase substantially and revenues will exceed accordingly. It is the projection of the Aquatic Consultant that the proposed improvements will in fact result in revenues exceeding the expenditures during the first year of operations.



Executive Summary

Based upon this completed study, it is the recommendation of the Aquatic Consultant that renovations and improvements to the existing Aquatic Facility at Lake Worth Beach would not be cost effective nor serve the Lake Worth community and visitors to the best interest of the City of Lake Worth.

It is the professional opinion of the Aquatic Consultant that this Aquatic Facility be closed until the bathhouse and filter room are totally rebuilt due to exposing the public and staff to the present hazardous conditions.

This report clearly identifies the need to demolish and rebuild the bathhouse and filter room. In addition, there are major repairs and modifications needed to the pool structure and filter system. These items alone will cost approximately \$2.8 million and will not substantially increase the aquatic facility's current use nor will the annual revenue increase.

Converting the 50-meter pool into a shallow water entry pool with interactive water features and amenities may increase the pool's attendance at a cost of additional \$1.2 million. With the addition of architect/engineering and pool designer fees, a contingency fund of 5% and FF&E budget of \$100,000 **the total project approaches \$4.6 million.**

Further, the Aquatic Consultant recognizes that during any renovation project there may be some unforeseen problems during the renovation and/or future problems with what remains regarding the old 50-meter pool.

It is the Aquatic Consultant's professional opinion that it would be a better decision for the City to totally rebuild a new family water park with lap lanes on the same footprint location. Use the same footprint with all the water features in this report and possibly add more features, such as a lazy river. This could be done for \$4.5 - \$5 million and would be a better use of the funding, than to try to save one end of the existing 50-meter pool. This new aquatic facility will have the potential to be self-supporting, as the revenue generated would cover the annual operational expenses.

Finally, it should be noted that a water park facility of this nature and at this location would require at least 300 additional parking spaces. This may require a new parking deck adjacent to the water park. This is an additional component to this report and would require additional funding above the \$4.5 - \$5.0 to the new water park concept for parking deck design and construction cost.